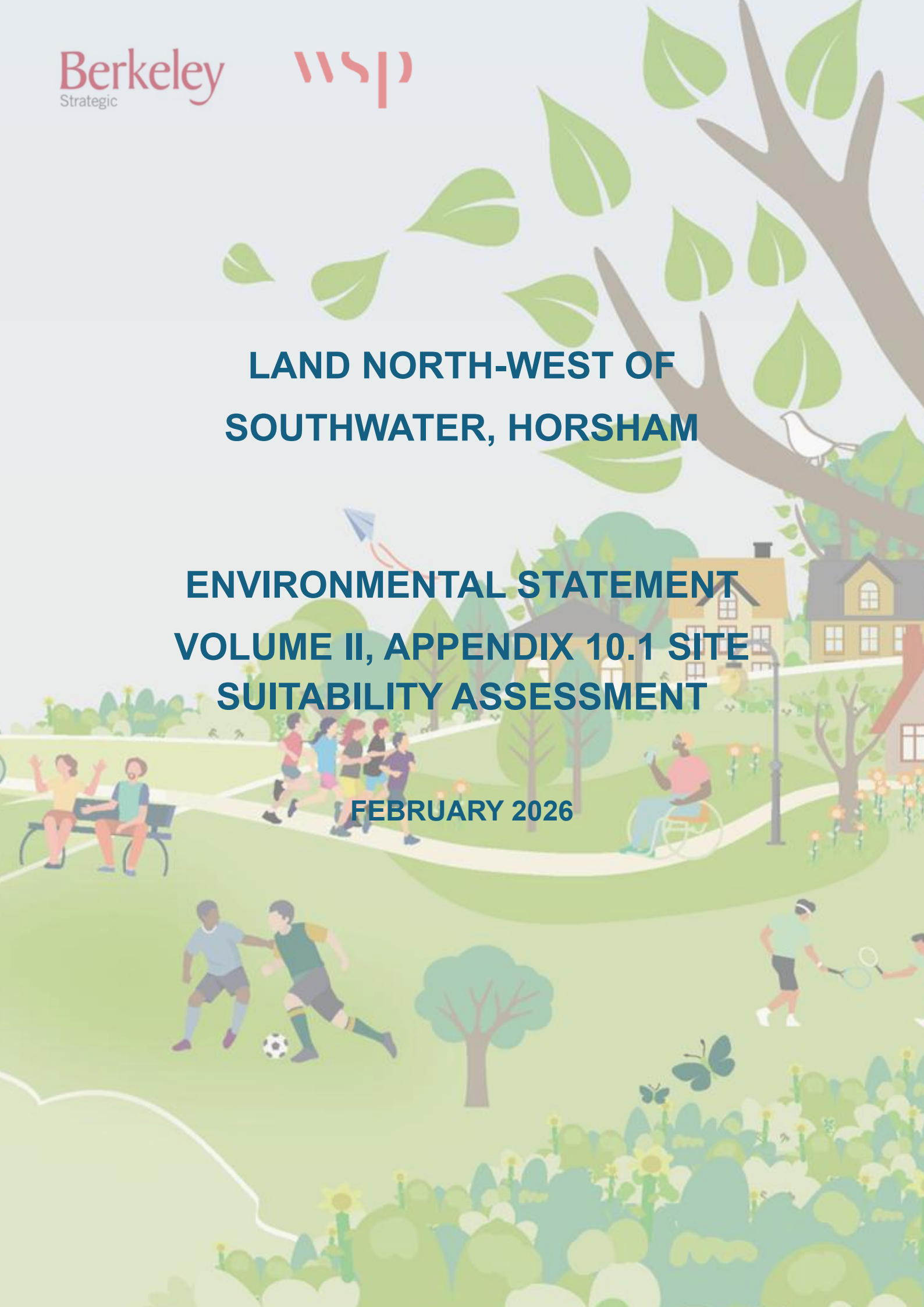


**LAND NORTH-WEST OF
SOUTHWATER, HORSHAM**

**ENVIRONMENTAL STATEMENT
VOLUME II, APPENDIX 10.1 SITE
SUITABILITY ASSESSMENT**

FEBRUARY 2026



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APPENDIX 10.1 SITE SUITABILITY ASSESSMENT

INTRODUCTION

The suitability of the Site for its intended use (residential and education being the main noise sensitive uses) has been assessed in accordance with relevant national and local policy, standards and guidance.

This assessment only considers the main area of the Site and not the small area at Christ's Hospital Station as no noise-sensitive uses are proposed in this area.

Given the outline nature of the application, this assessment focuses on whether the Proposed Development is, in principle, suitable for its proposed uses. As detailed masterplans are not yet available it is not possible to predict noise levels at future receptors. As such, a detailed mitigation strategy in the form of a glazing and ventilation specification cannot be provided. Further assessments will be undertaken at the reserved matters stage which should provide this detail once final plans are available.

The Planning Noise Advice Document: Sussex (2023) provides advice for noise assessments of sites proposed for new residential uses. The document states:

“When assessing the impact of transportation noise, be that from road, rail or air, then an Acoustic Design Statement shall be provided following the principles set out in ProPG:Planning and Noise (2017) “Professional Planning Guidance on Planning and Noise – New Residential Development. A Good Acoustic Design process shall be followed to achieve appropriate internal and external acoustic conditions.”

As discussed above, at this stage it is not possible to undertake an assessment in full accordance with an Acoustic Design Statement, however, the assessment of the suitability of the Site for residential use will be inherently based on the ProPG approach.

GOOD ACOUSTIC DESIGN

The ProPG introduces the concept of good acoustic design, and states the following:

“Good acoustic design can involve, for example, careful site layouts and better orientation of rooms within dwellings. Good acoustic design does not mean “gold plating” or significantly increasing costs. This guidance seeks to encourage and promote design outcomes that are proportionate and reasonable in the particular circumstances of each development site.”

At this outline stage, the following good acoustic design measures have been incorporated within the Proposed Development Parameter Plan (a copy of which is included below in Figure 1):

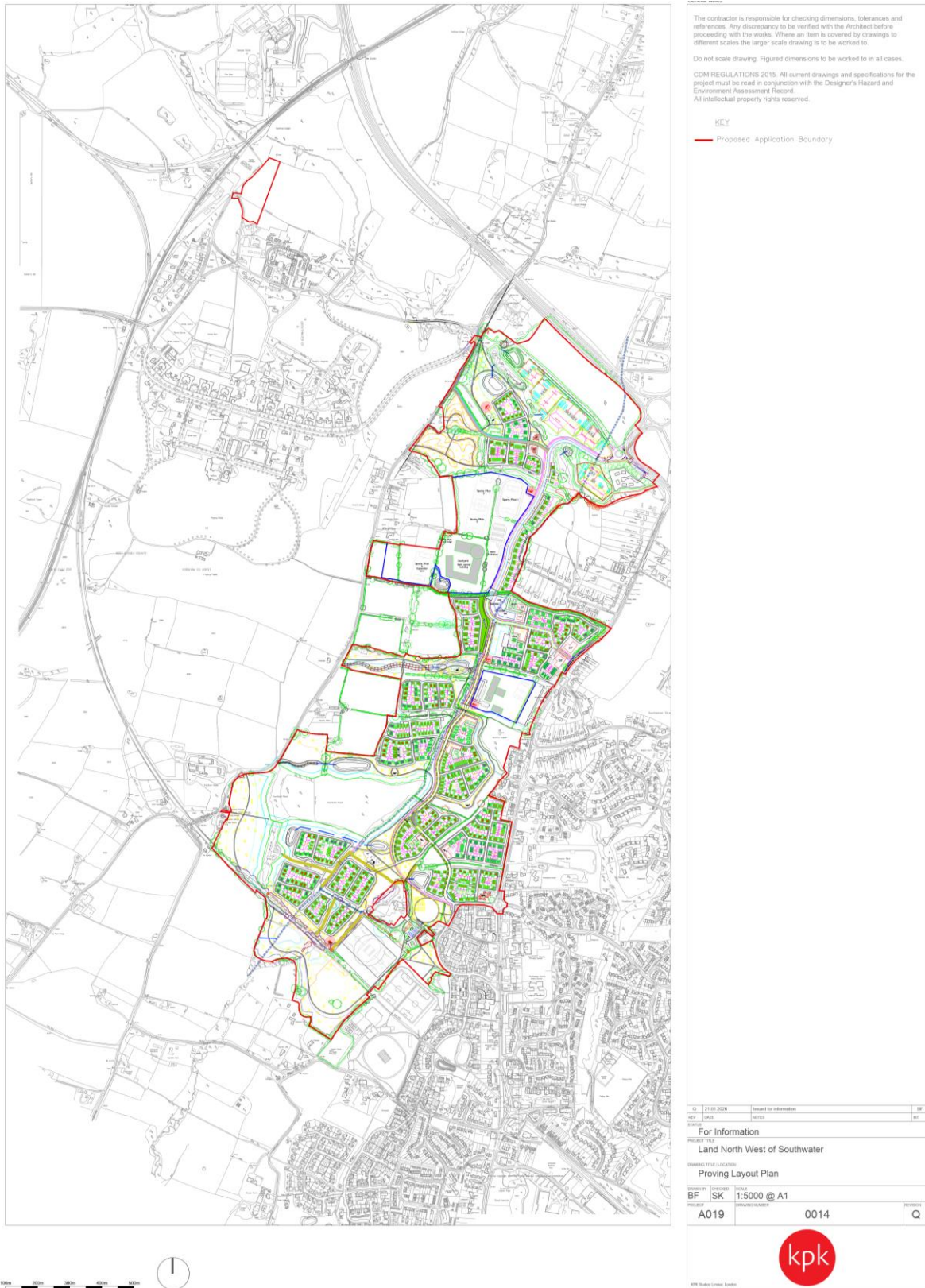
- The land allocated for employment use is proposed at the northern end of the Site, closest to the A24 which is the dominant noise source affecting the Site. This is beneficial on two accounts, firstly, the employment uses, being less sensitive to noise are a better use of the area of the Site where noise levels are highest. Secondly, the future buildings associated with the employment uses will provide screening to the noise sensitive education and residential uses proposed to the south.



- The residential and education land parcels are situated away from the A24 and the northern end of the Site where the highest noise levels are predicted. Generally, the noise sensitive land parcels are located away from major noise sources in the area, with the majority located towards the centre of the Site.
- Other noise generating uses (such as the proposed sports pitches) are generally located away from the proposed residential land parcels.

Further good acoustic design measures will continue to be incorporated as detailed masterplans are developed at the reserved matters stages.

Figure 1 - Screenshot of Proposed Development Proving Layout Plan





INTERNAL AND EXTERNAL NOISE CRITERIA

RESIDENTIAL

Initial Site Noise Risk Assessment

As discussed above, rather than a detailed receptor specific noise assessment, the ProPG Stage 1: Initial Site Noise Risk Assessment is considered more appropriate at this stage. This approach is based on a consideration of the external noise levels affecting a site and introduces four risk categories, negligible, low, medium and high. Figure 1: Stage 1 – Initial Site Noise Risk Assessment from ProPG has been reproduced below in Figure 2.

The noise levels predicted across the Site will be considered in terms of these four categories in the determination of the suitability of the Site for residential use.

Figure 2 - Stage 1: Initial Site Noise Risk Assessment (reproduced from ProPG)

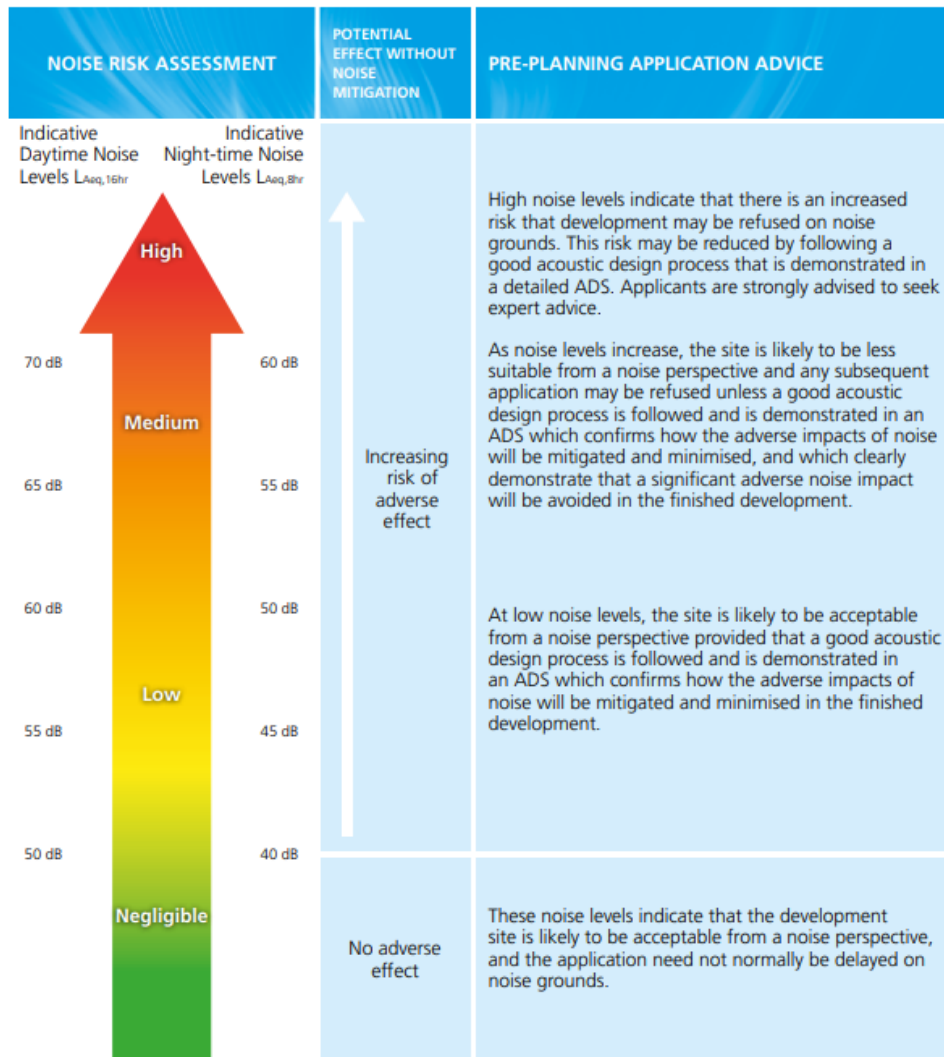


Figure 1 Notes:

- a. Indicative noise levels should be assessed without inclusion of the acoustic effect of any scheme specific noise mitigation measures.
- b. Indicative noise levels are the combined free-field noise level from all sources of transport noise and may also include industrial/commercial noise where this is present but is "not dominant".
- c. $L_{Aeq,16hr}$ is for daytime 0700 – 2300, $L_{Aeq,8hr}$ is for night-time 2300 – 0700.
- d. An indication that there may be more than 10 noise events at night (2300 – 0700) with $L_{Amax,F} > 60$ dB means the site should not be regarded as negligible risk.

Target Internal Noise Level Criteria

The Noise and Vibration Chapter of the EIA Scoping Report proposed that internal and external target noise criteria would be based on guidance within BS 8233:2014 Guidance on sound insulation and noise reduction for buildings and ProPG.

The Planning Noise Advice Document: Sussex also references the internal target noise levels within BS 8233 and the World Health Organisation’s Night Noise Guidelines for Europe (2009). The WHO guidelines do not include criteria as such but set out the findings of various studies regarding the health effects of night-time noise and maximum event levels in particular. The guidance within the ProPG is aligned with the Planning Noise Advice Document: Sussex.

On this basis, the criteria that have been adopted for the future homes within the Proposed Development are presented in Table 1.

Table 1 - Internal and External Target Noise Levels for Residential Development

Residential Space	Daytime (07:00 – 23:00 hours)		Night-time (23:00 – 07:00 hours)	
	Habitable rooms (i.e. bedrooms, living and dining rooms)	35 dB $L_{Aeq,16hr}$	30 dB $L_{Aeq,8hr}$	45 dB L_{Amax} (not to be exceeded more than 10 times per night)
External amenity areas	55 dB $L_{Aeq,16hr}$	-	-	

The night-time maximum event level criteria are based on ProPG which states:

“In noise-sensitive rooms at night (e.g. bedrooms) individual noise events (from all sources) should not normally exceed 45dB $L_{Amax,F}$ more than 10 times a night as this represents a threshold below which the effects of individual noise events on sleep can be regarded as negligible.”

EDUCATION TARGET NOISE LEVELS

Given the layout of the proposed schools has not yet been confirmed it is not appropriate to undertake an assessment based on specific spaces within the buildings. The following table presents the acoustic performance standards for noise sensitive spaces within schools which are based on guidance within Building Bulletin 93 (BB93) – Acoustic Design of Schools: Performance Standards (2015).

Table 2 - Performance Standards for Noise Sensitive Spaces within Schools from BB93

Type of room	Upper limit for the indoor ambient noise level, $L_{Aeq,30mins}$ dB
Classrooms	35
Open plan areas	40

Acoustics for Schools: A Design Guide (2015) recommends an outdoor target noise level of 55 dB $L_{Aeq,30mins}$ for playgrounds, although meeting this value is not mandatory.

NOISE CLIMATE

As discussed within the noise and vibration chapter, a 3D noise model has been produced which has been validated against the noise survey undertaken on the site.

It should be noted that the 3D noise model does not include any of the future homes forming the Proposed Development, i.e. the noise levels are predicted across an open Site. Once buildings are introduced to the Site, they would offer self-screening, such that noise levels across the majority of the Site would be lower after their introduction.

Daytime and night-time noise contour plots have been calculated for both the 2024 and 2036 (with proposed Development scenarios) and are presented as follows:

- Figure 3 – Base 2024 Predicted Daytime Noise levels;

- Figure 4 – Base 2024 Predicted Night-time noise Levels;
- Figure 5 – 2036 With Proposed Development Daytime Noise Levels; and
- Figure 6 – 2036 With proposed Development Night-time Noise Levels.

The noise model validation and derivation of the daytime $L_{Aeq,16hr}$ and night-time $L_{Aeq,8hr}$ parameters from the $L_{A10,18hr}$ noise levels predicted based on the provided traffic data is set out within the Baseline Conditions section of the noise and vibration chapter.

The Base 2024 noise contour plots provide a representation of noise levels currently affecting the Site and have been validated against the noise survey results. The 2036 noise contour plots provide an indication of the future noise levels likely to affect the Site, including the Primary Road and Secondary Road, which will be a noise source affecting future homes within the Site. The daytime noise contours have been calculated at a height of 1.5m and the night-time noise contours at a height of 4m above the ground.

Figure 3 - Base 2024 Predicted Daytime Noise Levels ($L_{Aeq,16h}$ calculated at 1.5m)

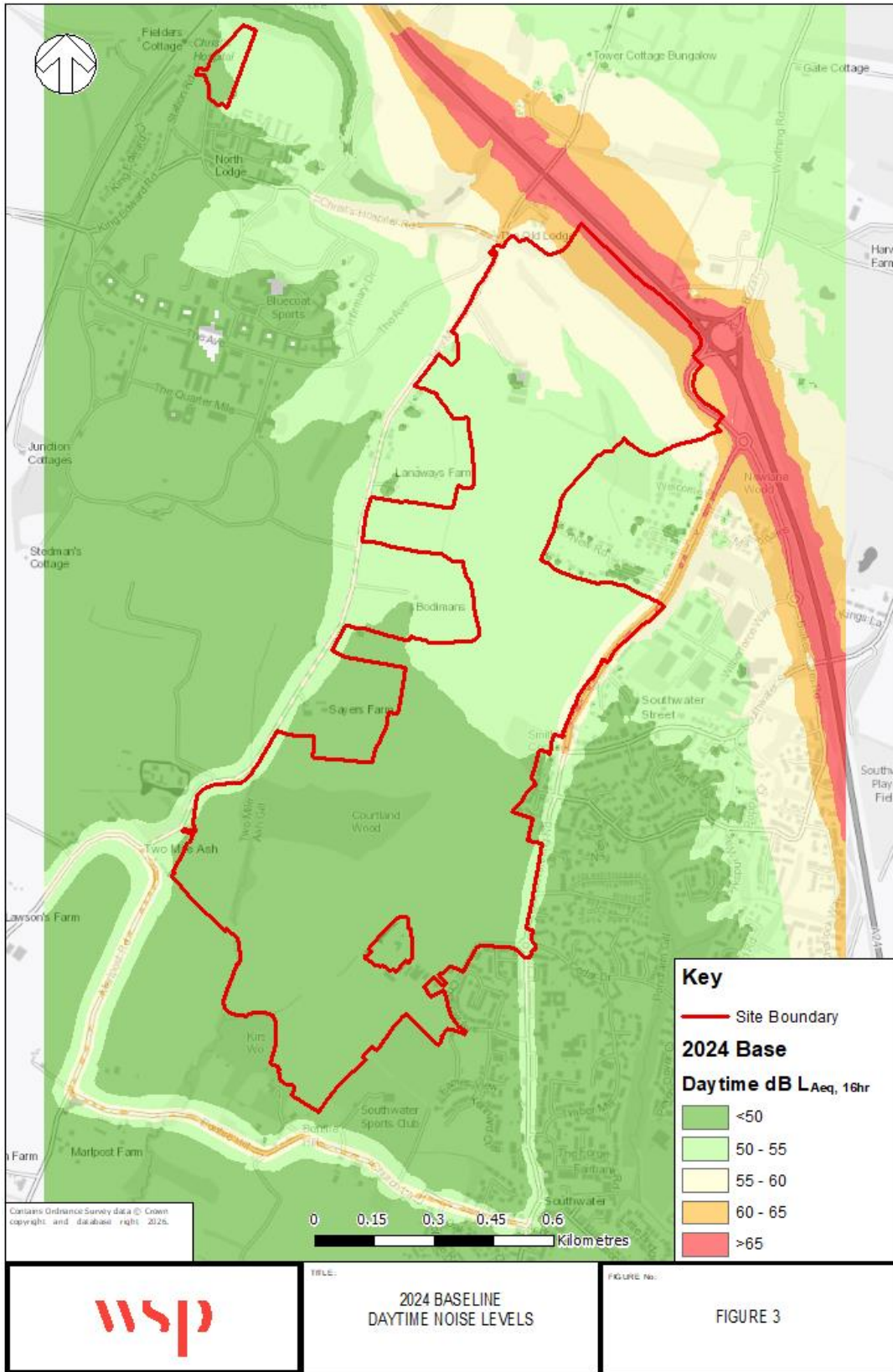


Figure 4 - Base 2024 predicted Night-time Noise Levels ($L_{Aeq,8hr}$ calculated at 4m)

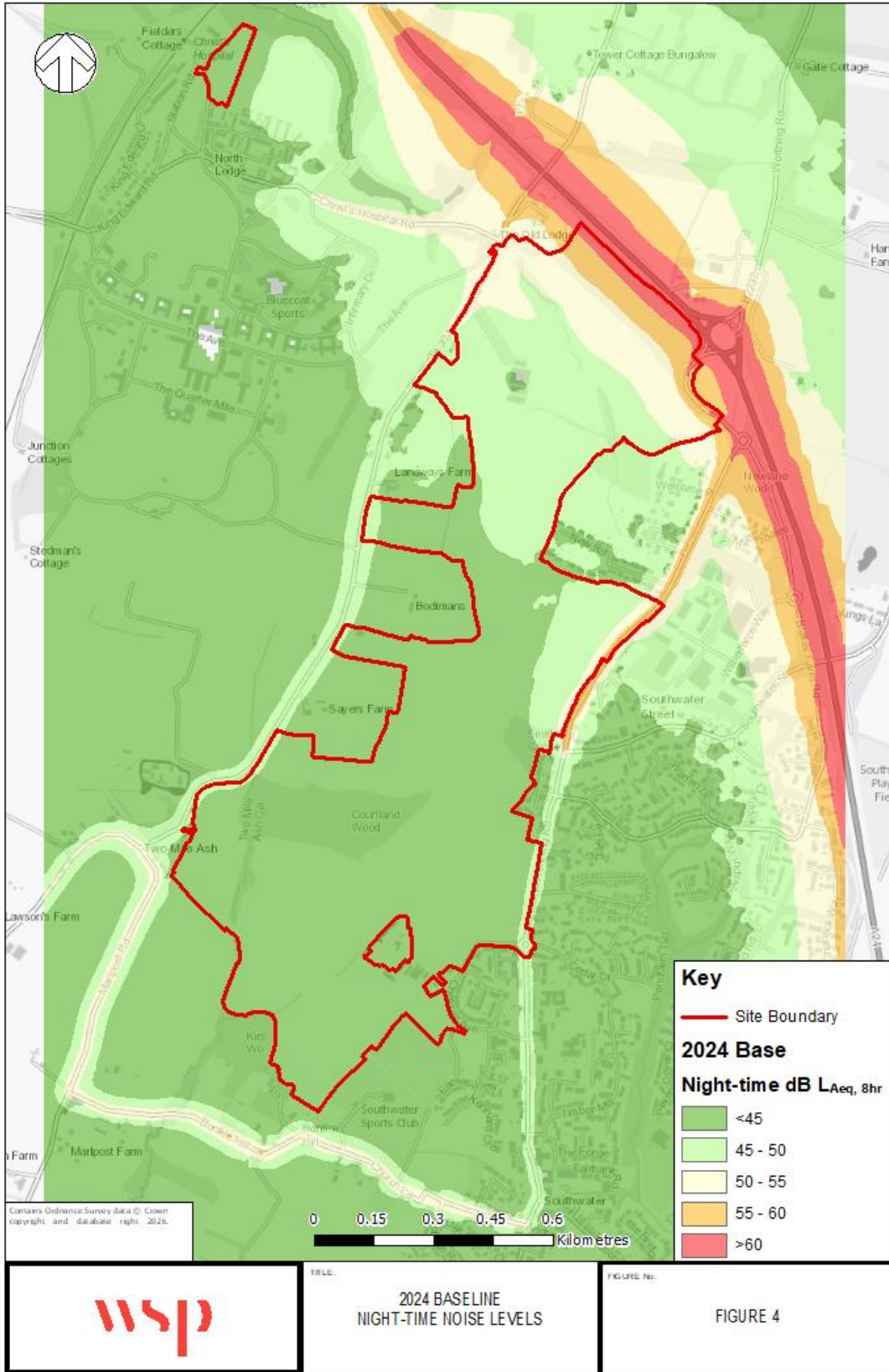


Figure 5 - 2036 With Proposed Development Daytime Noise Levels ($L_{Aeq,16hr}$ calculated at 1.5m)

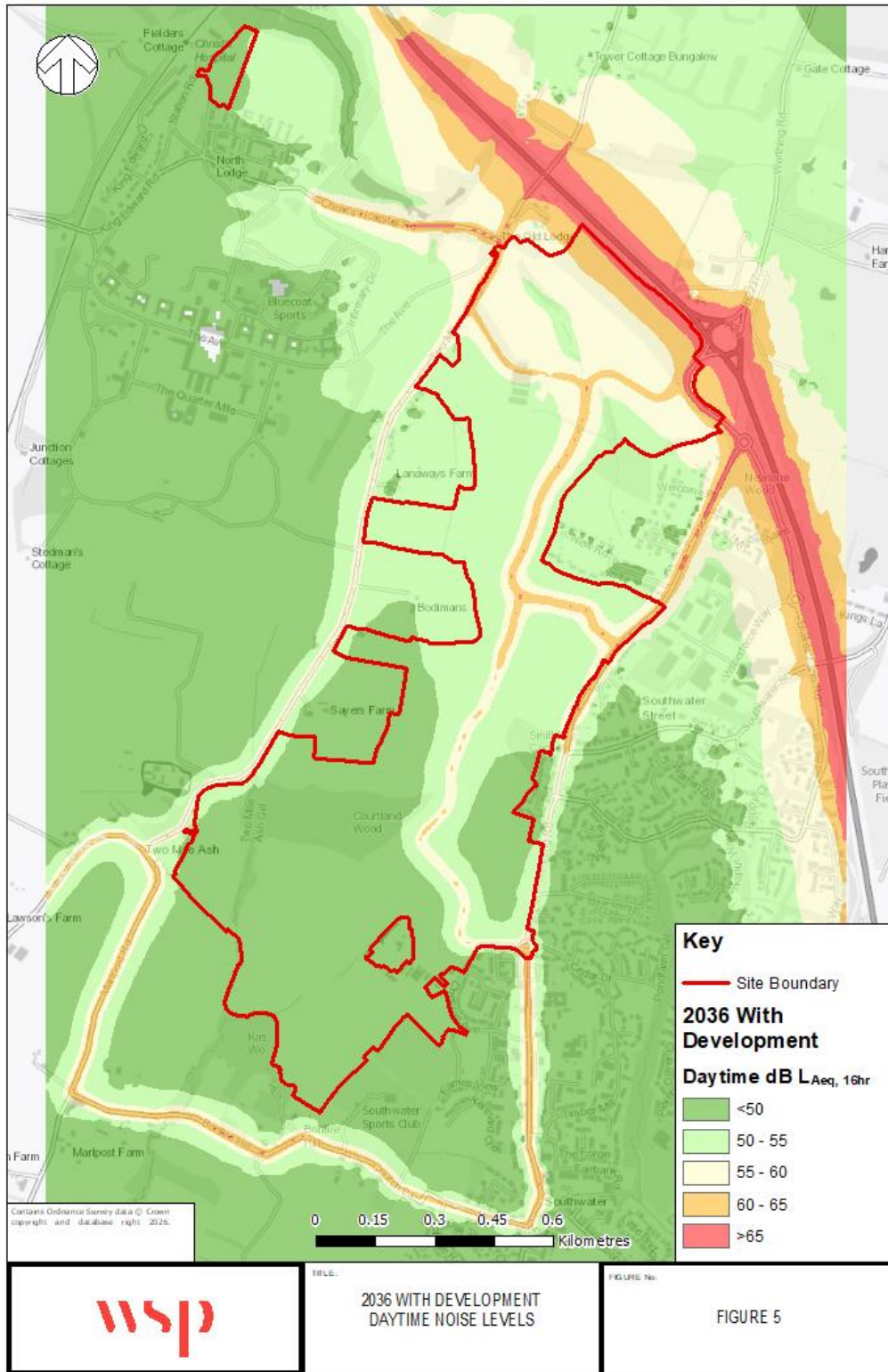
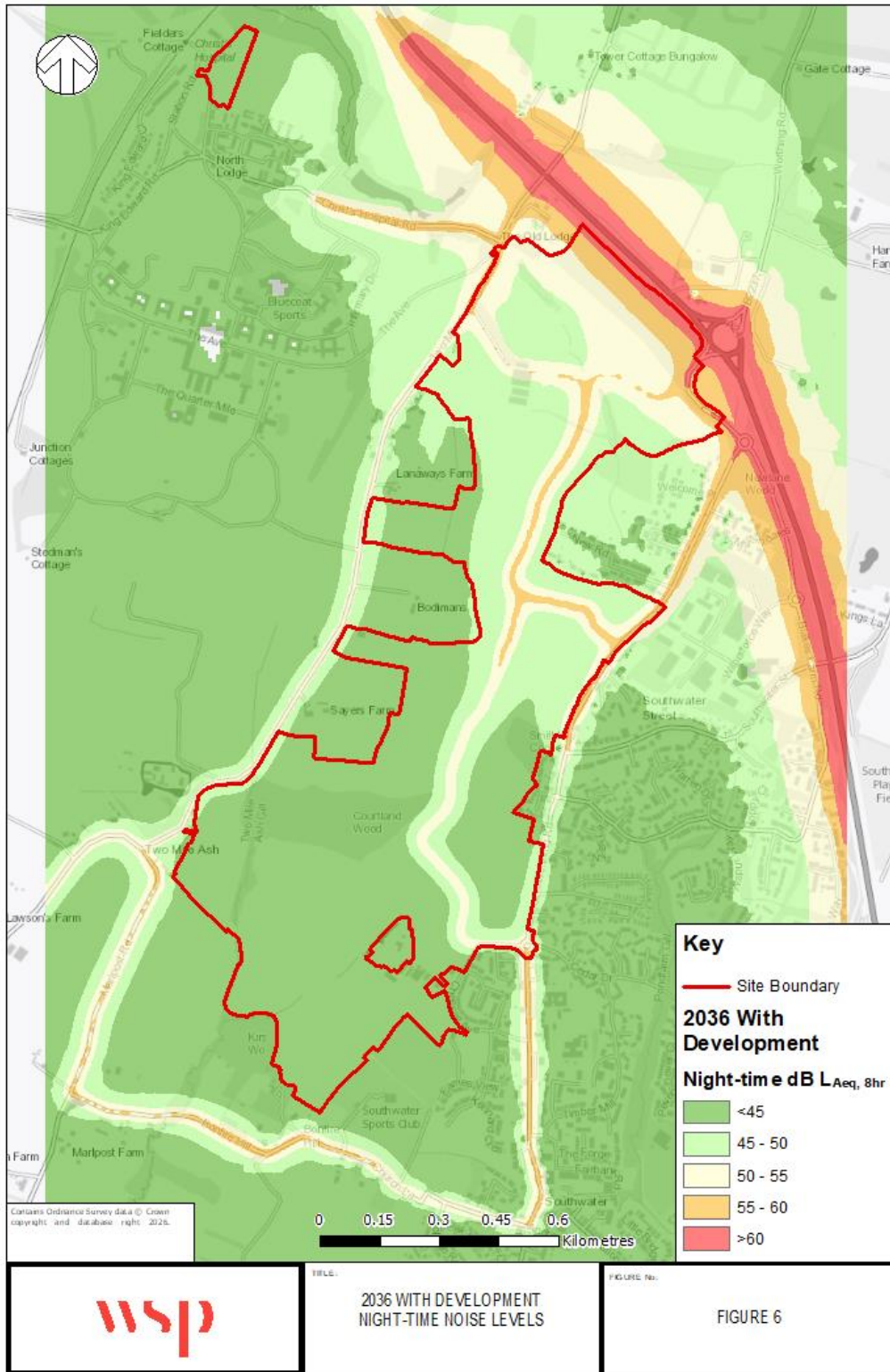


Figure 6 - 2036 With Proposed Development Night-time Noise Levels ($L_{Aeq,8hr}$ calculated at 4m)



SUITABILITY OF THE SITE FOR RESIDENTIAL USE

INITIAL SITE NOISE RISK ASSESSMENT

Firstly, it is clear from analysis of the predicted daytime noise levels that the vast majority of the Site is anticipated to experience noise levels of 55 dB $L_{Aeq,16h}$ or below. This aligns with the lower end of the 'Low' category in terms of ProPG. Some areas of the Site are even anticipated to fall within the 'negligible' category. The northern area of the Site is anticipated (in a very small area) to experience noise levels in excess of 60 dB $L_{Aeq,16hr}$ which would align with the upper end of the 'Low' category. However, no noise sensitive uses are located in this area.

Similarly, during the night-time, much of the southern area of the Site is anticipated to experience noise levels of 45 dB $L_{Aeq,8hr}$ or below which aligns with the lower end of the 'Low' category. The majority of the central area of the Site is anticipated to experience noise levels between 45 – 50 dB $L_{Aeq,8hr}$ which aligns with the upper end of the 'Low' category. The northern area of the Site is anticipated to experience noise levels in excess of 50 dB $L_{Aeq,8hr}$ which would align with the upper end of the 'Low' category. However, no noise sensitive uses are located in this area.

The Primary Road and Secondary Road will contribute to noise levels in the central area of the Site where currently noise levels are particularly low. However, as shown on Figure 5 and Figure 6, only those areas immediately adjacent to the Primary Road and Secondary Road are anticipated to experience noise levels in excess of the 'Low' category during the daytime and night-time periods.

With regard to the 'Low' category, ProPG states:

“At low noise levels, the site is likely to be acceptable from a noise perspective provided that a good acoustic design process is followed and is demonstrated in an ADS which confirms how the adverse impacts of noise will be mitigated and minimised in the finished development.”

As described above, given the outline stage, detailed mitigation measures will not be set out at this stage, however, clearly the initial site noise risk assessment indicates that the Site is suitable for residential use.

Whilst some areas of the Site, very close to Two Mile Ash Road and Worthing Road are anticipated to experience higher noise levels, this is only in a fairly narrow band close to these roads where it is anticipated that future residential development would be limited. Where receptors are located close to these roads, it is anticipated that suitable internal noise levels would be achievable.

In addition, the noise modelling does not account for any future buildings forming the Proposed Development. Once these buildings are constructed, it is likely that noise levels across the Site will be lower on account of the screening provided by the buildings.

EXTERNAL NOISE LEVELS

Analysis of the daytime noise contour plots indicate that the majority of the area of the Site proposed for residential use is likely to experience noise levels below 55 dB $L_{Aeq,16hr}$ which is the target noise level criteria from BS 8233 for external amenity areas (e.g. gardens). Further, it is likely that once the Site begins to be 'built out' the buildings themselves will provide screening from the main noise sources.

Where residential external amenity areas are proposed which are predicted to experience noise levels in excess of 55 dB $L_{Aeq,16hr}$ it is anticipated that the orientation of buildings to provide screening to rear gardens and garden fences will in most places be sufficient such that the target level is met. Noise levels within future residential external amenity areas should therefore not be a constraint to residential development on the Site.

INTERNAL NOISE LEVELS

As the majority of the proposed residential parcels are located within ‘Low’ risk areas, it is anticipated that significant mitigation will not be required for the majority of the Site such that appropriate internal noise levels are achieved within future homes.

The noise model has not been used to predict maximum event noise levels, however, these were measured at each noise survey position. It is anticipated that houses fronting existing roads such as Two Mile Ash Road and Worthing Road (or future roads within the Proposed Development) may be more affected by maximum event noise levels during the night-time than the ambient noise levels.

The closest residential parcel to an existing road is towards the south east of the Site fronting Worthing Road. At this stage, it is appropriate to consider the potential glazing requirements for future homes to ensure appropriate internal noise levels can be achieved in principle. As detailed plans are not yet available these calculations have been undertaken assuming the proposed receptors are a notional 10m from Worthing Road. This assessment is presented in Table 3 below.

Table 3 - Assessment of potential mitigation requirements for notional future receptor within the Proposed Development

Time Period	Predicted Worst-case Free-field Noise Level	Internal Target Criteria	Indicative Mitigation Measures
Daytime (07:00 - 23:00)	56 dB $L_{Aeq,16hr}$	35 dB $L_{Aeq,16hr}$	Standard double glazing ²
Night-time (23:00 - 07:00)	49 dB $L_{Aeq,8hr}$	30 dB $L_{Aeq,8hr}$	
	73 dB $L_{Amax,5min}$	45 dB L_{Amax} ¹	
¹ - Not to be exceeded more than 10 times per night ² - Based on the simple calculation methodology outlined in BS 8233. Ambient noise levels based on predictions from noise model (2036 with Proposed Development scenario), calculated at a height of 4m. Maximum event noise levels based on measurements at MP4 (adjacent to Worthing Road) corrected for distance.			

The above assessment is based on closed windows. The ventilation strategy for the future homes is not yet known and this will therefore need to be considered in more detail at the reserved matters stages.

Based on the predicted noise levels in Table 33, and as is typical for residential properties fronting minor roads such as this, the night-time maximum event noise levels will drive the mitigation requirements for residential development rather than the ambient noise levels. At the reserved matters stages, detailed assessments will need to consider both ambient and maximum noise levels against the target levels within Table 1 above.

Whilst the highest noise levels on the Site are anticipated in the northern end of the Site as no residential parcels are located in this area, it is anticipated that the notional receptor assessed above is likely to experience noise levels amongst the highest within residential parcels. It is therefore likely that standard double glazing will provide sufficient noise reduction for all homes within the Site.

The Proposed Development also includes an area allocated for Travellers pitches near the north east of the Site. Noise levels within this area are between the 'Low' and 'Medium' categories of the ProPG. However, the specification of a glazing and ventilation strategy is not relevant for Traveller receptors as accommodation will not be provided by this application. Provided the Traveller accommodation provides a good noise reduction, suitable internal levels for residential development should be achievable in this area.

Overheating

The balance of noise and overheating is a key consideration for new residential developments. As the cooling and ventilation strategy for future homes is not yet known, it is assumed at this stage that future residents are likely to rely on opening windows for cooling. However, opening windows can lead to increased internal noise levels in homes.

Approved Document O: Overheating (ADO) aims to protect the health and welfare of residents from high indoor temperatures. ADO states the following with regard to noise:

“Windows are likely to be closed during sleeping hours if noise within bedrooms exceeds the following limits:

- *40dB $L_{Aeq,T}$, averaged over 8 hours (between 11pm and 7am).*
- *55dB L_{AFmax} , more than 10 times a night (between 11pm and 7am).”*

At this outline stage, it is not appropriate to provide details of a noise and overheating strategy which ensures that where noise levels exceed these thresholds, residents will not need to rely on openable windows for cooling. This should be investigated at reserved matters and later design stages.

Based on the predicted external noise levels (and assuming a partially open window provide an external to internal reduction of 10 dB), it is likely that these limits will not be exceeded for some areas within the Proposed Development, where residential properties are set back from nearby road sources. However, for properties closer to, and overlooking the surrounding roads (and Primary and Secondary Roads), an alternative means of ventilation and/or cooling may be required.

Whilst details of the ventilation and cooling strategy with regard to noise will need to be confirmed at the reserved matters stage, it is considered that good acoustic living conditions can be achieved across the Site.

SUITABILITY OF THE SITE FOR EDUCATION USE

The Proposed Development Parameter Plan shows the location of the proposed schools towards the central area of the Site where noise levels are lower.

The BB93 criteria for classrooms and other internal spaces are in terms of 30 minute periods. Whilst the prediction methodology used in this assessment does not allow for road traffic noise predictions in terms of 30 minute periods, it is clear from analysis of the daytime noise contour plots that the noise levels are anticipated to be low in the area proposed for the schools.

As detailed plans are not available, it is not possible to undertake detailed calculations to determine the glazing and ventilation specifications for the schools. It is anticipated that this would be undertaken at the reserved matters stage for the school.

It is likely that the target external level of 55 dB $L_{Aeq, 30mins}$ would be achievable for external teaching areas within the school sites. Where external teaching areas are proposed which are predicted to experience noise levels in excess of 55 dB $L_{Aeq, 30mins}$ it is anticipated that the orientation of buildings to provide screening will in most places be sufficient such that the target level is met.

However, at this stage, it is considered that the external and internal target noise levels from BB93 and Acoustics for Schools: A Design Guide are likely to be achievable, and therefore, the Site is considered suitable for education use.

SUMMARY

Given the outline nature of the Proposed Development, detailed assessments of future homes cannot be undertaken in order to determine the required glazing and ventilation specifications such that appropriate internal noise levels are achieved. However, the principle of the suitability of the Site for its proposed uses has been considered.

Based on guidance within the ProPG, the majority of the Site is considered within the 'Low' category which indicates that "*noise levels are likely to be acceptable*". Calculations have been undertaken for a notional future residential receptor adjacent to Worthing Road as this is an area proposed for residential development likely to experience the highest noise levels. These calculations concluded that a standard double glazing unit would likely provide sufficient noise level reduction, subject to a suitable ventilation strategy.

Similarly, it is considered that the Site is suitable for education use and the external and internal target noise levels from BB93 and Acoustics for Schools: A Design Guide are likely to be achievable.

The principle of good acoustic design has already been demonstrated in the development of the Proposed Development Parameter Plans, and this principle will continue to be adopted as detailed masterplans are developed. Further, guidance within ProPG, the Planning Noise Advice Document: Sussex and ADO will all continue to be considered as future detailed assessments are undertaken at the reserved matters stage.



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